

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1. (currently amended) Method for regenerating etching solutions containing iron for the use in etching or pickling copper or copper alloys, characterized by the following steps:

- (i) feeding the etching solution to be regenerated from the etching system into an electrolysis cell being hermetically sealed or having an anode hood (8), the electrolysis cell comprising a cathode (1), an inert anode (2), means (3) for removing the electrolytically deposited copper from the cathode and means (4) for collecting the removed copper and applying a potential to the removed copper, wherein the electrolysis cell does not have an ion exchange membrane or a diaphragm, and wherein the etching solution to be regenerated contacts the cathode of the electrolysis cell first,
- (ii) electrolytically depositing the copper comprised in the etching solution at the cathode (1),
- (iii) oxidising the Fe(II) comprised in the etching solution to Fe(III) at the anode (2),
- (iv) removing the copper deposited at the cathode (1),
- (v) applying a potential to the removed copper to prevent re-dissolving of the copper, and
- (vi) returning the etching solution being thus treated to the etching system.

2. (currently amended) Method according to claim 1, ~~characterized in that~~ wherein the flow of the etching solution through the electrolysis cell and/or the current flowing through the electrolysis cell is controlled by on-line measuring the concentration of Fe(II)/Fe(III) or the concentration of Cu.

3. (currently amended) Method according to claim 2, ~~characterized in that~~ wherein the on-line determination of the concentration of Cu is carried out by photometric methods or by potentiometric measurement.

4. (currently amended) ~~Methods~~ Method according to ~~claims 1-3~~ claim 1, ~~characterized in that~~ wherein the electrolysis is carried out in the electrolysis cell using direct current.

5. (currently amended) Method according to ~~claims 1-3~~ claim 1, ~~characterized in that~~ wherein the electrolysis is carried out in the electrolysis cell using pulsed current.

6. (currently amended) Method according to ~~claims 1-5~~ claim 1, ~~characterized in that~~ wherein the etching solution is allowed to flow to the cathode first and subsequently to the anode.

7. (currently amended) Apparatus for carrying out the method according to ~~claims 1-6~~ claim 1, comprising a separate electrolysis cell being hermetically sealed or having an anode hood (8), the electrolysis cell having a cathode (1) and an inert anode (2), means (3) for removing the electrolytically deposited copper from the cathode, means (4) for collecting the

removed copper and for applying a potential to the removed copper, an inlet (5) in the lower region of the electrolysis cell between the cathode (1) and the means (4) for collecting the removed copper and applying a potential to the removed copper and an outlet (6), wherein the electrolysis cell does not have an ion exchange membrane or a diaphragm.

8. (currently amended) Apparatus according to claim 7, ~~characterized by~~ further having valves (7) for discharging the regenerated copper.

9. (currently amended) Apparatus according to claim 7 ~~or claim 8, characterized in that~~ wherein the cathode (1) is in the form of a rotating cathode and the means (3) is in the form of a stripping plate.

10. (currently amended) System for etching or pickling ~~of work pieces~~ comprising an apparatus according to ~~claims 7 to 9~~ claim 7.